REMARKS

Claims 1-5, 6-10 and 12 are pending. Claim 6 has been canceled.

Claims 1 and 12 have been amended to incorporate the features of Claim 6 and that the look-up table comprises a list of identifiers that is searched by the identifier look-up element. These claims have been amended for clarity purposes only and no subject matter is being added. Basis for the amendments can be found in Claim 6 and at page 5, lines 16-21 of the description.

On page 2 of the Office Action, Claims 1-10 and 12 are currently rejected under 35 USC § 103(a) as being unpatentable over US 6,963,586 (hereinafter referred to as "Henriksson et al.") in view of US 6,515,993 (hereinafter referred to as "Williams et al."). Applicants are traversing this rejection.

The application presently contains two independent claims, namely Claims 1 and 12. Below, Applicants explain that Henriksson et al. in combination with Williams et al. do not teach all of the elements of Claims 1 and 12.

As stated at Col. 1, lines 7-12 of Henriksson et al., this document relates to a reception packet processor and a protocol processor. Henriksson et al. attempts to address a number of technical problems, but most notable is the technical problem of evolving protocols. Henriksson et al. therefore attempt to find a solution that will cope with evolving protocols. While Henriksson et al. is entitled "Method and Apparatus for General-Purpose Packet Reception Processing", the "general purpose" aspect of Henriksson et al. is nevertheless highly targeted to packet reception processes that accommodate the transmission of larger data volumes (for example, an ATM packet of more than 1500 bytes) that are transmitted as packets (column 6, lines 9-18). The packet reception process is also based upon the premise that the location, encoding and usage of header information and data fields are already defined within a standard.

Henriksson et al. suggests a protocol processor that is based upon a general purpose microprocessor enhanced with special features specific to packet processing. Henriksson et al. teaches a protocol processor that processes first header information to provide instructions regarding processing of second header information (col. 3, line 15). Henriksson et al. also teaches provision of selected instructions for processing the

second header information (col. 3, lines 19-22) and generation of payload flags that are used by execution units (col. 3, lines 24-25). As such, it is clear that Henriksson et al. still relies upon the main processor for processing a payload (col. 5, lines 37 - 55).

According to col. 3, lines 31-45, the protocol processor can extract one or multiple fields from the first header information, and compare the extracted field(s) against one item of predetermined data and process the extracted field(s) using an "arithmetic and logic unit". Subsequently, the protocol processor can extract a plurality of fields and compare the extracted fields with a plurality of parameters supplied by a second look-up table using a plurality of comparators (col. 3, 47-62). This comparison is achieved, however, using a single pattern that is either "built-in" or supplied by a "parameter code book" (col. 9, lines 21-31). Consequently, in order to compare multiple patterns, Henriksson et al. discloses the use of multiple comparators (col. 9, lines 50-52). Henriksson et al. is not capable to comparing the header information against an arbitrary number of identifiers where each identifier may have an arbitrary value.

Furthermore, according to col. 7, lines 54-63, Henriksson et al. discloses the use of multiple look-up tables for holding instructions by dividing a program into separate parts; for the application stated, this approach seems beneficial. The look-up tables are not intended and not capable of holding matching identifiers.

Williams et al. relates to a data communication networking device, in particular data network switches capable of communicating frames to both local area networks and virtual local area networks (col. 1, lines 8-11). More specifically, Williams et al. relates to a multi-port switch (col. 2, line 67). As described at col. 2, lines 53-59 and col. 3, lines 1-10, Williams et al. concerns an internal rules checker and a port vector FIF logic operating together to process data frames based upon header information of the data frame to add, strip, or modify VLAN tags. The internal rules checker sends a forwarding descriptor, which contains information about the frame type and operation code information, to the port vector FIFO logic. The port vector FIFO logic then selectively manipulates the VLAN tags and instructs dequeuing logic in the output ports on a port-by-port basis on how to transfer the data frames. Williams et al. does not relate to automotive communications network. Indeed, VLANs do not exist in automobiles as such networks are not required.

Referring to Claim 1, Claim 1 recites an automotive information controller for an automotive communication system having at least one communication bus having an information unit with an identifier portion and a data portion corresponding to said identifier portion, said information controller comprising:

- an identifier look-up element for sending a predetermined program selector to a signal handler upon determination that the identifier portion of a received information unit corresponds to a predetermined identifier associated with the predetermined program selector; wherein
- the program selector defines an operation to be performed on the data portion by the signal handler; and
- said identifier look-up element further comprises a look-up table for storing a list of identifiers,
- said identifier look-up table element searching the look-up table in order to find said predetermined identifier and said predetermined program selector corresponding to said identifier portion.

However, and with particular reference to the underlined features of Claim 1 above, the teachings of cited Henriksson et al. in combination with Williams et al. fail to teach the identifier look-up element comprising a look-up table for storing a list of identifiers, and the identifier look-up table element searching the look-up table in order to find the predetermined identifier and the predetermined program selector corresponding to the identifier portion, as recited in Claim 1. Furthermore, the teachings of Henriksson et al. in combination with Williams et al. fail to teach an automotive information controller, as recited in Claim 1.

It is submitted that Henriksson et al. is incapable of searching a look-up table, because Henriksson et al. has a target of operating as described therein within a single clock cycle, i.e. insufficient time exists.

Additionally, it is submitted that the skilled person would not contemplate referring to Henriksson et al. for the following reasons. The automotive information controller of Claim 1 is intended to relieve the main processor completely or as much as

possible of the workload to receive, process and send packets. This is necessary because, in an automotive communications network, target applications involved frequently send many relatively short messages (1-8 bytes) that have to be re-routed, merged with other messages and then sent. Use of an interrupt driven general purpose processor of the type disclosed in Henriksson et al. for such tasks will only serve to keep the processor very busy, and may result in lost data in cases of high workload. Consequently, the use of the processor of Henriksson et al. in an automotive context is a very inefficient usage of the processor. Furthermore, the above-mentioned risk of data loss would be unacceptable to the skilled person in an environment where safety-related data is communicated. In Henriksson et al., there is no significant need to relieve the main processor, because a much lower number of messages arrive per channel. The fact can be easily adduced by considering that the combined length of the header information in the Ethernet layer (14 bytes) and the header information in the IP layer (20 bytes), as indicated at col. 11, lines 3-6, is much longer than the combined length of the identifier (11 or 29 bits) and the payload (1 - 8 bytes) of a CAN packet to be processed by the automotive information controller of Claim 1. Thus, the solution proposed by Henriksson et al. teaches the skilled person to implement packet processing in a main processor, which for the above reasons is technically disadvantageous and incompatible with the objectives of the present invention.

The utility value of the automotive information controller of Claim 1 is that it can support a typical customer application employing more than 500 identifiers, each associated with a different payload size, format and subsequent processing to maximize throughput. The number of identifiers is application dependent and the actual values are defined arbitrarily by customers. In contrast, the approach of Henriksson et al. is very different, but not unexpectedly since Henriksson et al. addresses a different problem space to that of the present invention. The purpose of the approach disclosed by Henriksson et al. is to support the processing of selection fields in a header, as defined by many communications standards in order to distinguish between different header formats. By way of example, consider the bit used by the CAN standard to distinguish between an 11-bit or 29-bit wide header. In contrast, the automotive information controller as recited in Claim 1 is based upon an assumption that such activity is

performed by a protocol receiver, because it is a protocol dependent feature and so should therefore be performed in such a unit. If this was not the case, it would not be possible for a single automotive communications controller of Claim 1 to receive messages in respect of different protocols, for example: CAN, LIN, UART, IIC. The automotive information controller operates at a different level of abstraction to the processor of Henriksson et al.; the automotive information controller simply receives an identifier or header information together with payload data for further processing. Hence, it can be seen that the automotive information controller of Claim 1 provides benefits in the context of automotive applications that Henriksson et al. is unable to deliver, either alone or in combination with Williams et al.

Turning to the reasons advanced in the Office Action for combining the teachings of Henriksson et al. with Williams et al., it is submitted that the arguments proposed are circular and employ hindsight. In this respect, the only reason given in the Office Action to make the modification to make the receiving apparatus is, in fact, to make the claimed information controller. There is no teaching in the cited prior art suggesting the modification and the present application only teaches the modified apparatus. See MPEP Section 2141: "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure[,] citing In re Vaeck."". Also, MPEP Section 2143.01, Subsection IV entitled "Mere Statement That The Claimed Invention Is Within the Capabilities of One of Ordinary Skill in the Art is Not Sufficient By Itself To Establish Prima Facie Obviousness." applies.

In addition, the reason provided: "*to optimize packet processing*", is conclusionary. It does not set forth how the combination of the two references would obtain the stated benefit. "Rejections on obviousness cannot be sustained by mere conclusionary statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." KSR, 550 U.S. at ___, 82 USPQ2d at 1396. In this respect, the statement provided ("*to optimize packet processing*") is indeed a conclusionary statement and not articulated reasoning and so a sufficient reason has not been provided. See also Ex parte Penhasi, BPAI Appeal No. 2007-2534 (December 13, 2007) ("The Examiner has not articulated a sufficient reason

why one skilled in the art would have modified [the art] and arrived at the presently claimed subject matter."). It is therefore submitted that the Office Action has not satisfied the necessary criteria of providing a reasoning to modify Henriksson et al. and so the rejection raised is improperly formulated.

Furthermore, the skilled person would not contemplate combining the teachings of Henriksson et al. with Williams et al., because Henriksson et al. relates to ATM communications, whereas Williams et al. relates to VLANs and so are technically incompatible.

In view of the reasoning provided above, Applicant submits that Henriksson et al. in view of Williams et al. does not render Claim 1 obvious.

Claims 2 to 10 depend from Claim 1. By virtue of this dependence, Claims 2 to 10 are also not obvious.

Claim 12 is a method claim corresponding to the apparatus of Claim 1. Consequently, the arguments set forth above in support of Claim 1 apply equally to Claim 12. As such, it is therefore respectfully submitted that the teachings of Henriksson et al. in combination with Williams et al. fail to teach the identifier look-up element comprising a look-up table for storing a list of identifiers, and searching the look-up table in order to find the predetermined identifier and the predetermined program selector corresponding to the identifier portion., as recited in Claim 12. Furthermore, the teachings of Henriksson et al. in combination with Williams et al. fails to teach a method for using an automotive information controller for an automotive communication system, as recited in Claim 12.

In view of the reasoning provided above, Applicant submits that Henriksson et al. in view of Williams et al. does not render Claim 12 obvious.

The case is believed to be in condition for allowance and notice to such effect is respectfully requested. If there is any issue that may be resolved, the Examiner is respectfully requested to telephone the undersigned.

If Applicant has overlooked any additional fees, or if any overpayment has been made, the Commissioner is hereby authorized to credit or debit Deposit Account 503079, Freescale Semiconductor, Inc.

Respectfully submitted,

SEND CORRESPONDENCE TO:

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